

Annual Progress Report (A003) for

Human Performance Tool Development and Analysis Support

FY15 Task: EARLY MANPOWER ASSESSMENT TOOL (EMAT) FOR STAMPS

ONR Award #: N00014-10-C-0392

Principal Investigator:

Beth Plott
Alion Science and Technology
4949 Pearl E. Circle, #100
Boulder, CO 80301



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Contract Summary

Period of Performance: 9/14/10 – 9/30/15

Reporting Period: 10/1/2014 – 9/30/15

Funded Value: \$4,957,078

Costs Incurred to Date: \$4,957,078

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Technical Report

Scientific and Technical Objectives

The Naval Surface Warfare Center, Carderock Division (NSWCCD) is responsible for the development and maintenance of the U.S. Navy's Leading Edge Architecture got Prototyping Systems (LEAPS) Integrated Digital Environment. The LEAPS environment provides a critical capability for storing and accessing ship product model data. The Early Manpower Assessment Tool (EMAT) is a tool and supporting algorithms for assessing ship manpower requirements early in concept development. STAMPS is a current Office of Naval Research (ONR) funded project that is developing a toolset that evaluates combined manpower and Navy platform systems to determine total platform ownership costs, mission risk, platform performance, design and manpower requirements over a range of military operations as well as other real world scenarios.

Under this completed FY15 effort, EMAT was enhanced to create initial Watch Quarter Station Bills (WQSB) and other data to support the specific needs of ship design and analysis with STAMPS. Alion provided services, facilities and personnel to support the STAMPS project. Monthly status reports and computer software was delivered.

Approach

This project was primarily a software development effort. Alion was the original developer of EMAT and as such was uniquely qualified to make changes to the tool.

The following phases were performed:

1. Requirements specification,
2. Software Design,
3. Implementation and integration,
4. Testing,
5. Deployment, and
6. Maintenance.

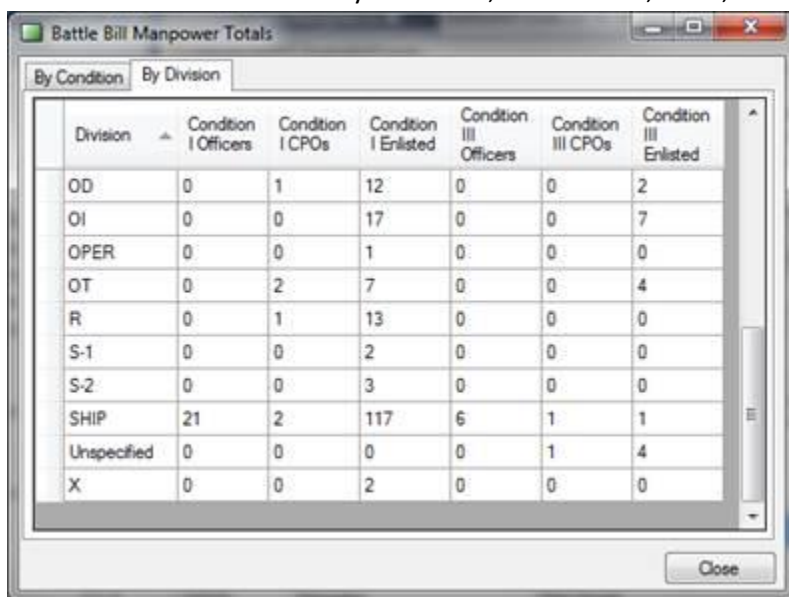
Alion worked closely with NSWCCD 823 and ONR STAMPS to meet software development objectives.

Accomplishments

The accomplishments under the 2015 effort for this contract included further development of the Early Manpower Assessment Tool (EMAT).

Specific Enhancements to EMAT are:

- Added copy capability to all grid editors. The grid editors used to display data can now all be sorted by clicking on the column to sort by. Clicking once will sort in ascending order and clicking it again will re-sort in descending order. Users can copy items from the grid by highlighting the section of rows and columns you want and pressing Ctrl-C. The data is put on the system clipboard and can be copied anywhere from there by using Ctrl-V or right clicking and choosing Paste. Alternately, users can select the entire grid by clicking in the upper left corner of the grid. Either right click and choose Copy, or press Ctrl-C to put the data into the clipboard.
- Added ability to remove all Preventive Maintenance Items. Users can now delete all of the PM Items that were added to the database by EMAT from the analysis at once in the “Tree View of Concept Ship Systems” tab.
- Updated the View Operational Manning Totals. The new “By Division” tab shows a grid view of each Division broken down by Condition, and Officers, CPOs, and Enlisted.



Division	Condition I Officers	Condition I CPOs	Condition I Enlisted	Condition III Officers	Condition III CPOs	Condition III Enlisted
OD	0	1	12	0	0	2
OI	0	0	17	0	0	7
OPER	0	0	1	0	0	0
OT	0	2	7	0	0	4
R	0	1	13	0	0	0
S-1	0	0	2	0	0	0
S-2	0	0	3	0	0	0
SHIP	21	2	117	6	1	1
Unspecified	0	0	0	0	1	4
X	0	0	2	0	0	0

- Updated EMAT to work with LEAPS 4.5. Replaced LEAPS 4.3 with 4.5 in the project solution and tested EMAT running with the new version.
- Built a 64 bit installation package.

Our accomplishments included delivery of the updated EMAT source code and user documentation (user manual and windows help file).